Exchange rate economics

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1 Introduction

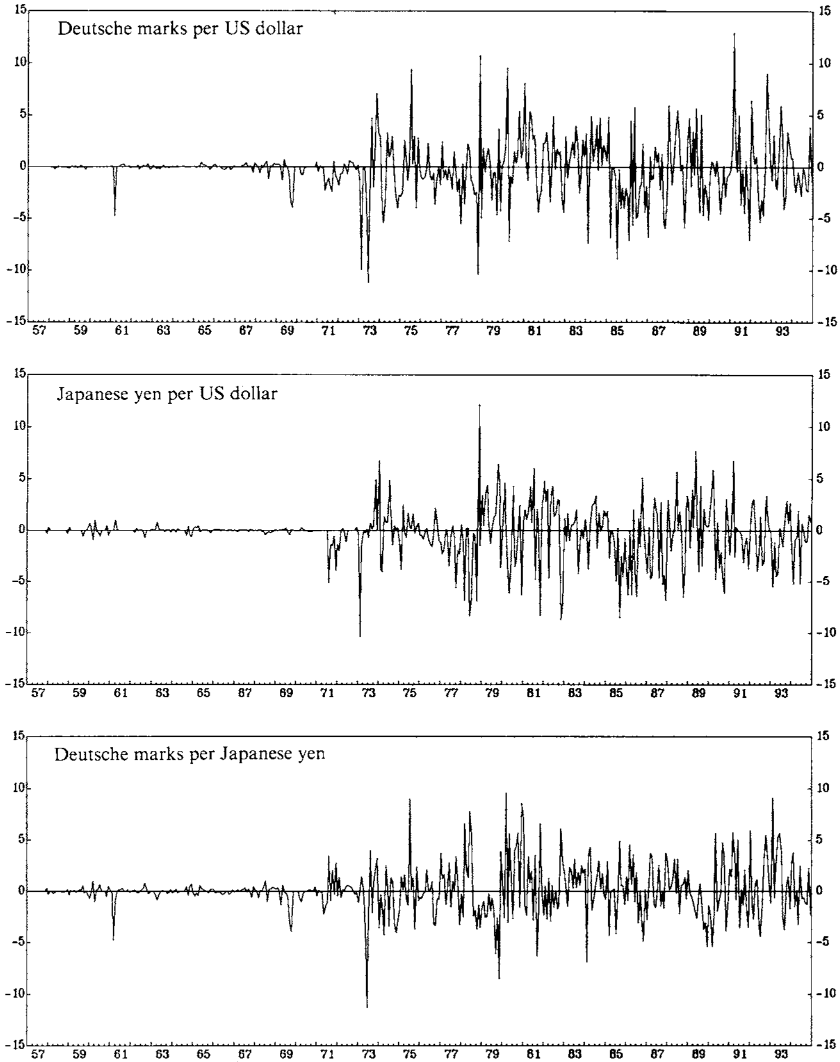
Exchange rate economics was revitalized in the early 1970s. The catalyzing event was the crumbling of the postwar international monetary system, under which countries had for the previous quarter century kept their exchange rates fixed within narrow ranges, with only occasional adjustments. Subsequently, except within Europe, the major industrial countries have maintained flexible exchange rate arrangements, and market pressures have been allowed to generate large fluctuations in currency values. This has given economists a new set of phenomena to explain.

In a fundamental sense, however, the renewed interest in exchange rate economics has also reflected the fact that exchange rates are important. Changes in exchange rates have pervasive effects, with consequences for prices, wages, interest rates, production levels, and employment opportunities, and thus with direct or indirect implications for the welfare of virtually all economic participants. Accordingly, large and unpredictable changes in exchange rates present a major concern for macroeconomic stabilization policy.

To many economists and policymakers, the extent to which exchange rates have fluctuated since the early 1970s has indeed been quite surprising. Typically, exchange rates between the major currencies have changed by several percent per month, while changes of 10 percent or more in a matter of weeks have not been uncommon. This can be seen in figures 1.1 and 1.2 and table 1.1, which focus on exchange rates between the world's three most widely traded currencies – the United States dollar, the German mark, and the Japanese yen.

Figures 1.1 and 1.2 distinguish between short-term and longer-term fluctuations. Short-term variability, characterized by month-to-month percentage changes, increased dramatically following the shift from fixed to flexible exchange rates in the early 1970s (figure 1.1).[1] During the period 1974–94, the absolute values of month-to-month percentage changes averaged about $2\frac{1}{2}$ percent for each of the three key-currency exchange rates

[1] Prior to 1971, the only two occasions of large month-to-month changes were the realignments of the mark in March 1961 and September–October 1969.



Source: Based on end-of-month data from International Monetary Fund, *International Financial Statistics.*

Figure 1.1 Short-term variability of key-currency exchange rates, 1957–94, percentage change from previous month

Table 1.1. *Perspectives on exchange rate variability, 1974–94*

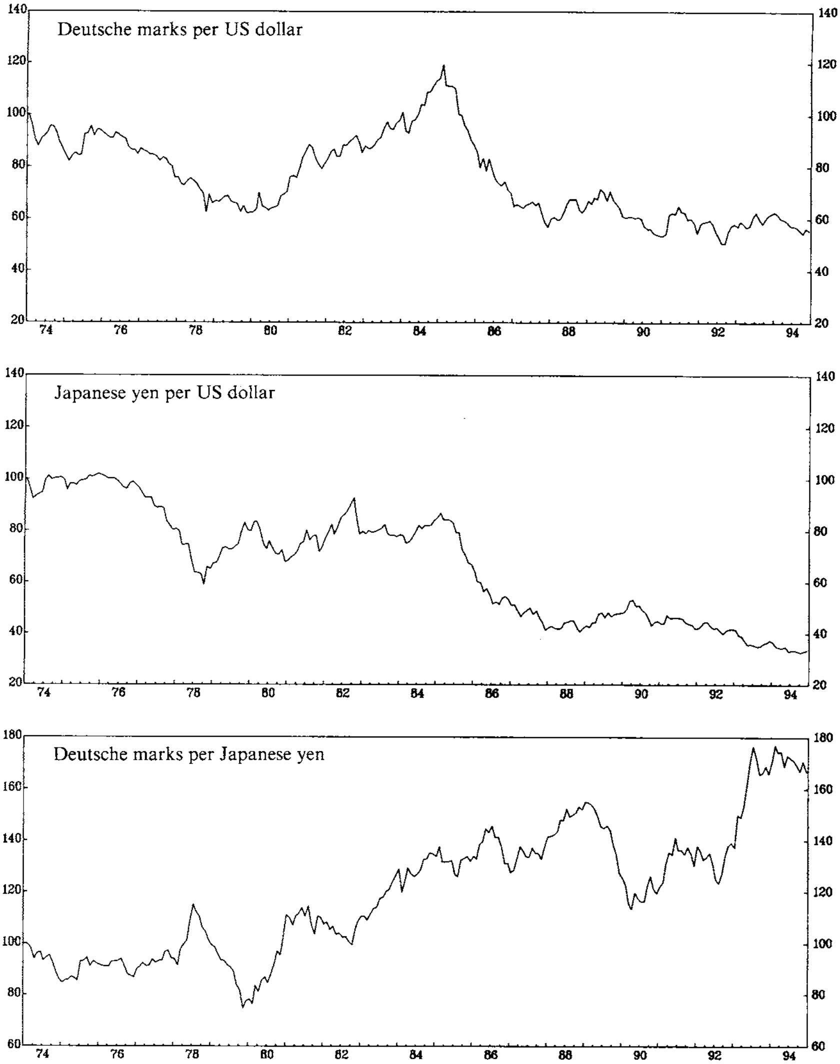
	Average absolute values of month-to-month percentage changes		
	1974–83	1984–94	1974–94
Nominal exchange rates			
Deutsche marks per US dollar	2.38	2.78	2.59
Japanese yen per US dollar	2.38	2.45	2.41
Deutsche marks per Japanese yen	2.43	2.22	2.32
Consumer price indices			
United States	0.66	0.32	0.48
Germany	0.37	0.22	0.29
Japan	0.59	0.25	0.41
Stock-market price indices			
United States	2.92	2.49	2.70
Germany	—	3.76	3.75[a]
Japan	2.24	3.68	3.00
Commodity price indices			
Agricultural raw materials	2.52	1.89	2.19
Minerals and metals	2.47	2.71	2.59
Food	3.25	2.09	2.65
Gold	5.58	2.40	3.92
Petroleum	5.18	6.27	5.75

Note:
[a] 1984–94.
Sources: International Monetary Fund, *International Financial Statistics*, except for equity price indices, which are from Data Resources Inc. The equity price indices are the Dow Jones index, the Frankfurt Commerzbank index, and the Nikkei 225 average.

(table 1.1). To put this number into perspective, these exchange rates varied month-to-month roughly five times as much during 1974–94 as the prices of consumer goods and services in the United States and Japan, and eight times as much as consumer prices in Germany. At the same time, however, the key-currency exchange rates have exhibited somewhat less month-to-month variability than major stock-market price indices, and comparable or lower variability than the prices of many primary commodities.

Over intervals longer than a month, the successive month-to-month changes in exchange rates have often offset each other.[2] Nevertheless, the

[2] From end-of-year to end-of-year during the 1974–94 period, the percentage changes in the mark/yen exchange rate were only about twice as large in average absolute value as the month-to-month percentage changes, while year-to-year percentage changes in the mark/dollar and yen/dollar rates had average absolute values about four times those of the month-to-month percentage changes.



Source: Based on end-of-month data from International Monetary Fund, *International Financial Statistics.*

Figure 1.2 Key-currency exchange rates, 1974–94 (January 1974 = 100) cumulative changes in these exchange rates over the past two decades have been large (figure 1.2), and on some occasions the deviations of exchange rate from their longer-term trends have seemed to defy rationality. The most outstanding example was the dramatic appreciation of the dollar against the mark from end-1980 to early 1985, which doubled the purchasing power of the dollar and greatly increased the propensity of US residents to take European vacations and shopping trips. The rise of the dollar was followed by an even sharper fall through early 1987.

Given the pervasive effects that changes in exchange rates can have on economic conditions, policymakers naturally want to understand what can feasibly be done to limit exchange rate variability, and with what consequences. Economists, stimulated by the policy issues, have engaged in extensive conceptual and empirical research aimed at explaining the behavior of exchange rates since the early 1970s. To date, however, these research efforts have met with only limited success. Meanwhile, the policy issues have evolved as lessons have been learned from, and new questions raised by, the experience of attempting to maintain macroeconomic stability in an evolving world economy.

This book provides a broad survey of exchange rate economics. Part I presents relevant historical and institutional background on foreign exchange markets and exchange rate arrangements. Part II, the core of the book, focuses on the behavior of exchange rates, describing the evolution of both conceptual models and empirical research, summarizing what has been learned to date, and pointing to some new directions in the literature. Part III provides policy perspectives on the key issues that arise in deciding whether to maintain fixed or flexible exchange rate arrangements and, more generally, in considering whether, and how, to try to stabilize exchange rates.

When attempting to explain changes in exchange rates from day to day and year to year, most experts traditionally point to the behavior of other macroeconomic variables. Normally, little attention is paid to the institutional characteristics of the environment in which exchange rates are determined – and rightly so, since such characteristics tend to change very gradually over time. Nevertheless, an awareness of certain institutional influences, and of how they have evolved, provides relevant perspectives in developing an understanding of exchange rate behavior. For this reason, historical and institutional background is provided in part I of the book, which is organized into two chapters. Chapter 2 focuses on relevant characteristics of foreign exchange markets and money, with particular attention to the features of modern foreign exchange trading. Chapter 3 describes the different types of exchange rate arrangements that countries may choose, and presents a brief history of the evolution of international monetary regimes over the past century.

The discussion of institutional considerations emphasizes that the behavior of exchange rates from transaction to transaction largely reflects the instincts of foreign exchange "dealers" in adjusting their bid and asked quotations in response to both the flow of trading and the flow of news and rumors. The review of historical experience suggests that exchange rate behavior depends importantly on the exchange rate arrangements and international monetary regimes that countries choose, and on the actions of policy authorities. Yet, despite the influence of marketmakers and policy authorities, the behavior of exchange rates is linked fundamentally to the behavior of other economic variables. Indeed, the rate quotations and market transactions of foreign exchange dealers, as well as the actions of policymakers, are generally responsive to current economic developments and to changes in the economic outlook. These perspectives are emphasized in part II of the book, which addresses the relationships between exchange rates and other economic variables.

Historically, economists have identified price levels, interest rates, and international payments balances as three classes of economic variables to which the behavior of exchange rates is linked particularly closely. Chapter 4 focuses on the relationships between exchange rates and ratios of national price levels, discussing the purchasing power parity hypothesis and the counterarguments, reviewing the empirical evidence, and summarizing the main implications for exchange rate models and policies. Chapter 5 considers the relationships between exchange rates and international interest rate differentials, discussing the covered and uncovered interest rate parity hypotheses, along with various possible interpretations of the empirical finding that interest rate differentials provide biased predictions of changes in exchange rates. Chapter 6 reviews the conceptual literature that had developed by the early 1970s on exchange rates and the balance of payments. This literature, which largely preceded the rational expectations revolution in macroeconomics, includes the static elasticities–absorption models of the current account, the early models of external-and-internal stabilization policy for the open economy (the Mundell–Fleming framework), and the early monetary and portfolio-balance forms of asset equilibrium models of the balance of payments under fixed exchange rates.

Beginning in the 1970s, conceptual models of exchange rate behavior emphasized that currency values, like stock market prices, tend to jump in response to new information about economic variables or events that may affect the economy. Chapter 7 focuses on several classes of forward-looking models that have been developed to capture the influence of news, and of revisions in expectations, on the dynamic behavior of exchange rates, including the phenomenon of exchange rate "overshooting." It also addresses the conceptual literature on exchange rate target zones.

Chapter 8 provides a short survey of the literature on the empirical performance of single-equation (or small-scale) structural models of exchange rate behavior since the early 1970s. It also considers the inferences that have been drawn about the effectiveness of exchange market intervention policies, and it briefly describes the treatment of exchange rates in large-scale macroeconometric models.

Chapters 9 and 10 discuss new directions in the analysis of exchange rate behavior. Chapter 9, which focuses on why, and when, exchange rates come under attack in fixed rate regimes, illustrates the perspectives that emerge from using a policy optimization approach to model the behavior of realignment expectations and the risk premium, and to analyze the effectiveness of exchange market intervention. Chapter 10 considers new directions in conceptual models of flexible exchange rates, including both models in which market participants are assumed to form rational expectations based on complete information, and models in which market participants either are not fully rational or have limited information.

Chapters 11 and 12, comprising part III of the book, turn to exchange rate policy. Chapter 11 discusses how the structural characteristics of economies, along with various other considerations, affect a country's optimal choice between fixed and flexible exchange rate arrangements. It also addresses the trend toward increased international capital mobility and its implications for the choice of currency arrangements, with particular attention to exchange arrangements during the process of transition toward a common currency for Europe. Chapter 12 focuses on several policy issues that bear importantly on exchange rate stability, regardless of whether countries adopt fixed or flexible exchange rate arrangements. Perspectives are provided on the importance of fiscal and monetary discipline as a precondition for exchange rate stability, on the pros and cons of placing restrictions on international capital movements, on the "capital inflows problem" and its policy implications, and on the role and limitations of international policy cooperation in stabilizing exchange rates.

Although the book does not contain a summary chapter, conclusions on the state of exchange rate economics can be found in the final sections of chapters 4 through 6 and chapters 9 through 12. In particular, chapters 4 through 6 provide concluding perspectives on the relationships between exchange rates and other economic variables, chapters 9 and 10 on new directions for modeling the behavior of exchange rates, and chapters 11 and 12 on exchange rate policies and the prospects for exchange rate stability.